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Notice of Allowability	Application No.	Applicant(s)	
	09/663,620	SHORT, JAY M.	
	Examiner	Art Unit	
	Nashaat T. Nashed, Ph. D.	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the telephonic aproval of the examiner amendment 2/18/05.
2. ☒ The allowed claim(s) is/are 238-261 and 264-269.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Art Unit: 1652

The application has been amended as requested in the communication filed December 6, 2004. Accordingly, claims 221 and 232 have been amended, claims 172-174, 176-189, 202, 204-213, and 236 have been canceled, and new claims 239-269 have been entered.

Claims 170, 171, 175, 190-198, 203, 214-219, 221-224, 226-230, 232-235, and 237-269 are pending and under consideration.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Calvin Fan on February 18, 2005.

The application has been amended as follows:

(1) Cancel claims 170, 171, 175, 190-198, 203, 214-219, 221-224, 226-230, 232-235, 237, 262 and 263.

(2) Rewrite claim 238, 265, 266, and 269 as shown bellow:

Claim 38. A method for identifying a protein having an activity of interest, comprising:

- (a) incubating nucleic acids obtained directly without selection from a mixed population of organisms from an environmental source, said nucleic acid has at least a portion of a nucleic acid sequence encoding a molecule of interest, with at least one oligonucleotide probe labeled with a detectable label ~~and at least a portion of a nucleic acid sequence encoding a molecule of interest~~, under such conditions and such time to allow interaction of complementary sequences;
- (b) identifying nucleic acid sequences having a complement to the oligonucleotide probe using an analyzer that detects the detectable label;
- (c) generating a library from the identified nucleic acid sequences;
- (d) screening the library for a specified activity;
- (e) mutating a nucleic acid sequence contained in a clone from the library having the specified activity; and
- (d) comparing the activity of an expression product of the clone from (e) following mutation with the specified activity of an expression product of the clone without mutation, wherein a difference in the activity is indicative of an effect of introducing at least one

Art Unit: 1652

sequence mutation, thereby identifying a protein having an activity of interest.

- Claim 265. The method of claim 226 264, wherein the comparison is performed using a sequence comparison algorithm.
- Claim 266. The method of claim 238, wherein, prior to (e), the nucleic acid sequences are further screened for a desired characteristic.
- Claim 269. The method of claim 238, wherein the improved activity of interest comprises an enhanced ~~or superior~~ enzymatic activity compared to that of wild-type.

Claims 238-261 and 264-269 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashaat T. Nashed, Ph. D. whose telephone number is 571-272-0934. The examiner can normally be reached on MTTF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Primary Examiner
Art Unit 1652